

Base map from U. S. Geological Survey  
Hatch 7.5' Quadrangle, 1968

SCALE 1:24,000  
1 1000 0 1000 2000 3000 4000 5000 6000 7000 FEET  
1 1 2 3 4 5 6 7 8 9 10 KILOMETER

CONTOUR INTERVAL 20 FEET  
DATUM IS MEAN SEA LEVEL

13°29' E  
240 mils  
1997 MAGNETIC DECLINATION  
AT CENTER OF SHEET

# GEOLOGIC MAP OF THE HATCH QUADRANGLE, GARFIELD COUNTY, UTAH



Mapped by Kurlich in 1986  
Nomenclature modified by Kurlich and Anderson  
in 1990, 1992, 1994, and 1995.  
Lori J. Douglas, Cartographer

The Miscellaneous Publication Maps provide an outlet for  
authors who are not Utah Geological Survey staff. Not all  
aspects of this publication have been reviewed by the UGS.

by  
Richard A. Kurlich III  
and  
John J. Anderson

1997



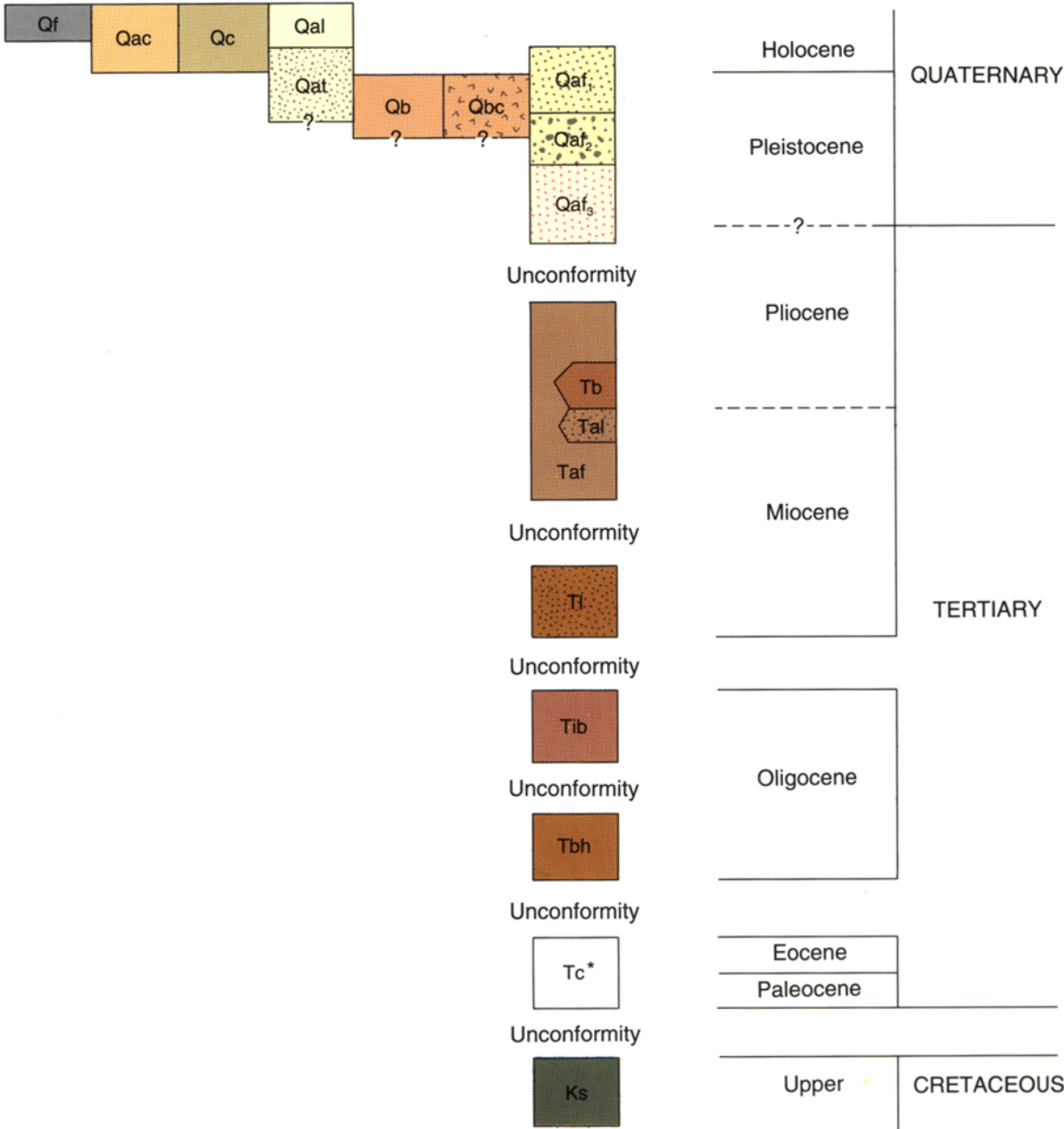
DESCRIPTION OF MAP UNITS

- Qf** Artificial Fill - Locally derived fill material in earthen dams and along drainage ditches.
- Qc** Colluvium - Talus and slopewash that accumulate at the base of cliffs; thickness variable, may exceed tens of feet.
- Qal** Channel and Floodplain Alluvium - Unconsolidated silt, sand, and gravel along the Sevier River and Mammoth Creek; thickness 20 feet (6 m) or less.
- Qat** Terrace Deposits - Unconsolidated silt, sand, and gravel on abandoned floodplains along the Sevier River and Mammoth Creek; thickness less than 25 feet (8 m).
- Qac** Alluvium and Colluvium - Unconsolidated silt, sand, and gravel in and next to small stream channels and locally in alluvial fans; thickness a few feet.
- Qaf<sub>1</sub>** Younger Alluvial-Fan Deposits - Unconsolidated silt, sand, and gravel capping broad sloping plains and in drainages; thickness up to 13 feet (4 m).
- Qaf<sub>2</sub>** Intermediate Alluvial-Fan Deposits - Unconsolidated silt, sand, and gravel in mounds and ridges that are erosional remnants as much as 140 feet (43 m) above present drainage levels; thickness up to 13 feet (4 m).
- Qbc<sub>1</sub>** Basaltic Cinder Cone - Unconsolidated, angular blocks of brick-red, highly scoriaceous basaltic debris; possibly the remains of a cinder cone; thickness only a few feet.
- Qb** Quaternary Basalt Flow - Gray to black, vesicular to scoriaceous, phenocryst-rich, olivine basalt in the valley of Mammoth Creek; thickness approximately 20 feet (6 m).
- Qaf<sub>3</sub>** Older Alluvial-Fan Deposits - Moderately to poorly consolidated, pink, yellow, orange, and red silt, sand, and gravel; located east of the Sevier River; exposed thickness up to 200 feet (61 m).
- Tb** Tertiary Basalt - Dark reddish-brown and steel gray, vesicular to scoriaceous basalt; rich in olivine phenocrysts; thickness variable, with a maximum of 100 feet (30 m).
- Tal** Late Tertiary Alluvium - Moderately to poorly consolidated, pink silt, sand, and small gravel of unknown provenance; "nested" in late Tertiary alluvial-fan deposits and overlain by Tertiary basalt; thickness estimated at 100 feet (30 m).
- Taf** Late Tertiary Alluvial-Fan Deposits - Moderately well to poorly consolidated tan, pink, and "salt-and-pepper" colored, tuffaceous siltstone, sandstone, pebbly sandstone, and pebble conglomerate; interbedded sparse limestone and air-fall tuff; overlies and underlies Tertiary basalt; thickness approximately 760 feet (232 m).
- Ti** Limerock Canyon Formation - Pale- to dark-green, white and bluish-white tuffaceous sandstone and lesser conglomerate and mudstone, with interbedded, numerous air-fall tuffs, minor shale, and local chalcodony; thickness approximately 250 feet (76 m).
- Tib** Baldhills Tuff Member of the Isom Formation - Welded ash-flow tuff with lower, blue-gray cooling unit and upper, dark-brown and reddish-purple, massive cooling unit; thickness estimated to be 100 feet (30 m).
- Tbh** Brian Head Formation (restricted) - White to tan and gray, argillaceous limestone, calcareous shale, siltstone, sandstone, and conglomerate; maximum exposed thickness approximately 180 feet (55 m).
- Tc** Claron Formation (cross section only) - Basal quartzite conglomerate overlain by argillaceous limestone and calcareous mudstone; thickness greater than 600 feet (183 m).
- Ks** Straight Cliffs Sandstone - Tan, massive to cross-bedded, fine- to medium-grained, well-sorted sandstone; thickness greater than 500 feet (152 m).

MAP SYMBOLS

- Contact - Dashed where approximately located on surface, or of unknown depth and configuration in cross sections.
- Strike and dip of inclined beds.
- Fault - Dashed where inferred or approximately located, dotted where concealed, ball and bar on down-thrown block.
- Lineament - Conspicuous linear features on aerial photographs, probable joint or fault of small displacement, direction of movement unknown.
- Slump block - Break-away scarp at head of a coherent block of slumped bedrock, hachures on down-thrown side.
- Anticline - Dashed where inferred or approximately located, dotted where concealed.
- Syncline - Dashed where inferred or approximately located, dotted where concealed.

CORRELATION OF MAP UNITS



\*Shown only in cross section

SYSTEM	SERIES	STRATIGRAPHIC UNITS	SYMBOL	THICKNESS in feet (meters)	LITHOLOGY
QUATERNARY	Holocene	Surficial Deposits	Qf Qal Qac Qc Qat Qaf <sub>1</sub> Qaf <sub>2</sub>	0 - 25* (0 - 8)	
	Pleistocene	Quaternary basalt Cinder cone Older Alluvial - Fan Deposits	Qb Qbc Qaf <sub>3</sub>	0 - 20 (0 - 6) 200+ (61+)	
TERTIARY	Pliocene				
		Tertiary Basalt	Tb	0 - 100 (0 - 30)	
	Miocene	Late Tertiary Alluvium	Tal	0 - 100 (0 - 30)	
		Late Tertiary Alluvial - Fan Deposits	Taf	760 (230)	
	Oligocene	Limerock Canyon Formation	Ti	290 (88)	
		Baldhills Tuff Member of Isom Formation	Tib	0 - 100+ (0 - 30+)	
	Eocene	Brian Head Formation (restricted)	Tbh	180+ (55+)	
		Claron Formation	Tc	>600 (>180)	
CRETACEOUS	Cretaceous	Straight Cliffs Sandstone	Ks	500+ (150+)	

\*Thickness of surficial deposits not to scale.

